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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,543	07/07/2000	Makoto Funabashi	1982-0153P	9387

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EXAMINER	
LIN, JAMES	
ART UNIT	PAPER NUMBER
1762	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/612,543	FUNABASHI, MAKOTO	
	Examiner	Art Unit	
	Jimmy Lin	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,9-12,14-20,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14-19* is/are allowed.

6)☒ Claim(s) *1,3,4,9-12,20,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of "a ratio of 1:8 and 1:40" (claim 1) is indefinite. It is unclear as to whether the ratio is on a weight or mole basis. For the purpose of this examination, it will be interpreted to be at least inclusive of both.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-4, 9, 12, 20, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jamil (U.S. Patent 5,772,916) in view of Arakawa et al. (U.S. Patent 6,031,236).

Jamil discloses a method of making a radiation image conversion panel (abstract), comprising the steps of:

a) calcining a stimulable phosphor in a furnace for 1 to 4 hours, then cooling the phosphor until the phosphor temperature is below 100 °C (col. 8, lines 14-18; col. 9, lines 25-35);

b) dispersing the calcined phosphor in methyl ethyl ketone (col. 11, lines 21-26) and stirring with a non-metallic stirrer to obtain a slurry (col. 11, lines 33-34);

c) wet classifying wherein a final mesh in the wet classification is 20 μm (col. 11, lines 46-51);

d) forming a slurry with the phosphor and a polyurethane binder (col. 12, lines 29-47), wherein the binder and the phosphor can be mixed with a weight ratio of up to 1:8.5 (col. 13, lines 14-24);

e) applying the coating material to a support and drying to thereby form a phosphor layer (col. 13, lines 25-52).

Jamil does not explicitly teach that the phosphor remains in the slurry between steps (b) and (c) or that the stimulable phosphor is 10 to 300 parts by weight per 100 parts by weight of methyl ethyl ketone of the first slurry. Jamil teaches a drying step between steps (b) and (c) (col. 11, lines 58-62), but does not teach a criticality for drying the phosphor. In examples 1-3, the phosphors are dried only to determine the particle size distribution. The dried phosphor is reconstituted into a second slurry that comprises a binder. The second slurry can use the same solvent as the first slurry (col. 12, lines 29-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have kept the phosphor in the same slurry between steps (b) and (c) because Jamil teaches that the first and second slurry can use the same solvent and that the drying step is not critical. One would have been motivated to do so in order to reduce the number of steps in the process.

Jamil teaches that the second slurry the phosphor can be 171 to 570 parts by weight per 100 parts by weight of methyl ethyl ketone (col. 13, lines 17-24).

Jamil teaches that any stimulable phosphor may be used (col. 8, lines 14-18), but does not teach that the stimulable phosphor can be BaFBr:Eu, BaFI:Eu or a mixture thereof or that the calcining temperature can be 750-900 °C. However, Arakawa teaches that the stimulable phosphor can be BaFBr:.001Eu (example 1). The calcining temperature can be 750-850 °C (example 2). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used BaFBr:.001Eu as the particular stimulable phosphor in the process of Jamil with a reasonable expectation of success because Jamil teaches that any suitable stimulable phosphor may be used and because Arakawa teaches that such phosphors are suitable for making a radiation image storage panel.

Jamil teaches that a non-metallic stirrer can be used to obtain a slurry, as discussed above, but does not teach using a propeller to stir. However, Arakawa teaches that a propeller can be used to agitate the slurry (example 1). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a non-metallic propeller to obtain the slurry of Jamil with a reasonable expectation of success because Jamil teaches that a non-metallic stirrer is preferred and because Arakawa teaches that a propeller can be used for such applications.

Claims 3-4,12: Jamil teaches that the wet classification step includes the step of decanting part of the slurry in order to separate agglomerated phosphors greater than about 20 μm. The wet classification step is repeated several times (col. 11, lines 47-55). This step is performed before the step of adding the binder.

Claim 9: Jamil teaches that the wet classification step employs sieving (i.e., filtration) (col. 11, lines 47-51).

Claim 24: Jamil teaches that the substrate can be coated with a light reflection layer (col. 13, lines 56-65; col. 14, lines 21-26) and that a protective overcoat may be provided over the phosphor coating (col. 14, lines 30-32).

Claim 25 is addressed above.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jamil (U.S. Patent 5,772,916) and Arakawa et al. (U.S. Patent 6,031,236) as applied to claim 1 above, in view of Leblans et al. (U.S. Patent 5,360,578).

Jamil teaches a wet classification process that includes the step of sieving as discussed above, but does not teach employing the sieves arranged in a plurality of stages having decreasing mesh sizes. However, Leblans teaches that the particles may be sieved through a plurality of stages having decreasing mesh size (col. 4, line 56-col. 5, line 13). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have sieved the phosphor of Jamil and Arakawa through a plurality of stages having decreasing mesh sizes.

One would have been motivated to do so in order to further filter the phosphor to get a more desirable particle size distribution.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jamil (U.S. Patent 5,772,916) and Arakawa et al. (U.S. Patent 6,031,236) as applied to claim 9 above, in view of Hultsch et al. (U.S. Patent 4,405,454).

Jamil and Arakawa is discussed above, but does not teach classification by pressure filtration. However, Hultsch teaches that pressure filtration is suitable method for classifying particles from dispersions (Abstract, col. 2, lines 56-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used pressure filtration as the particular wet classification method of Jamil and Arakawa with a reasonable expectation of success because Hultsch teaches that such methods are suitable for classifying particles from dispersions.

Allowable Subject Matter

7. Claims 14-19 are allowed for the reasons already of record.

Response to Arguments

8. Applicant's arguments, see pgs. 8, filed 1/4/2007, with respect to the rejection of claim 20 under 35 U.S.C. 103 over Weiss '550 and Leblans '578 have been fully considered and are persuasive.

9. Applicant's arguments filed 1/4/2007 have been fully considered but they are not persuasive.

Claims as rejected over Jamil '916:

The Applicant argues that the removal of the drying step would render the invention of Jamil unsatisfactory for its intended purpose when taking into consideration that the instant binder is polyurethane. The Applicant further argues that the isopropyl alcohol used to suspend the reactivated powder has to be removed before polyurethane is added and thus the drying step would be essential. However, the argument is not commensurate in scope with the rejection

because the rejection clearly states that methyl ethyl ketone (MEK) is used as the particular dispersing solvent (col. 11, lines 21-26) and that the second slurry can use the same solvent as the first slurry (col. 12, lines 29-38). Although Jamil teaches that isopropyl alcohol is the most preferred solvent, Jamil also exemplifies MEK as a suitable solvent. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998).

Regarding the criticality of the drying step, the Applicant only argues that this step for removing isopropyl alcohol, which cannot dissolve polyurethane, has to be conducted. However, the Applicant relies mainly on the teachings in Examples I to III and does not address the criticality of the drying step in light of the teachings of Jamil as a whole. As noted above, the solvents for the first and second slurry can both be MEK, which necessarily dissolves polyurethane binders because such a limitation is required in the claims. To have 1) formed a first slurry using MEK, 2) dried the first slurry, and 3) formed a second slurry using MEK would have created a process with an unnecessary drying step. Thus, one of ordinary skill in the art at the time of invention would have recognized that such a drying step could be removed when using the same solvent in the first and second slurry.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rabatin (U.S. Patent 4,360,571, Example 1), Alles (U.S. Patent 2,819,183, col. 2, lines 1-22), and Rabatin (U.S. Patent 4,208,470, Example 1) also show examples of wet classification of slurries of a phosphor and a binder before applying them to form a panel.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JL

JL

KEITH HENDRICKS
PRIMARY EXAMINER